

REMARKS

Claims 21-32 are pending herein. Claims 21 and 22 have been amended herein and new claim 32 added.

1. Claims 21-31 were rejected under §112, second paragraph.

Claim 21 now recites that the sealing element includes a portion that projects beyond and away from the casing member, that portion including a contact surface for sealing placement against an adjacent dynamic sealing surface when placed into service. Orientations of the direction of projection of the sealing elements are shown in the drawings. For example, Fig. 4 illustrates portion 66 extending radially inwardly (in the downward vertical direction) and axially left to right. Applicants submit that the amendments to claim 21 clarify the nature of the projecting portion of the sealing element and that the claims fully comply with §112, second paragraph. Accordingly, reconsideration and withdrawal of the §112, second paragraph rejection are respectfully requested.

2. Claim 27 was objected to for informalities. Applicants submit that amendments to Claim 27 attend to this matter.

3. Claims 21, 22, 24-26, 29 and 31 were rejected under §103 over Savoia in view of Skinner and Adell. Applicants respectfully traverse this rejection.

The claimed invention is drawn to a method for making a seal device, which may find industrial application in various technology areas including sealing a rotating shaft with respect to a housing. One particular application is the use of such seals in power steering pumps used in automotive applications. The method of claim 21 calls for placing a polymer material onto a metallic substrate and chemically bonding them together to form a metallic construction, followed by shape forming the metallic construction into a desired shape. Claim 21 has been amended herein to clarify that both the metallic substrate and the polymer material layer are bent together thereby forming a contoured portion along which both the metallic substrate and the polymer material layer extend. This feature is shown throughout the various figures of the

present application, such as Fig. 4, which illustrates a casing having radial portion 64 and axial portion 62 that are formed by shape forming, wherein the polymer material layer extends along the casing, notably including the contoured portion that is formed by the bend in the casing. The process continues with trimming to form the sealing device.

It appears that the PTO has relied upon Savoia for basic structural features of the presently claimed invention, and has acknowledged that a forming process as claimed is not disclosed by Savoia. Accordingly, the PTO has looked primarily to Skinner, disclosing a shaping technique in which a seal is formed by co-shaping a substrate and polymer layer together. The PTO has also apparently looked to Adell for similar teaching in the art of co-shaping seals.

Applicants respectfully submit that the references of record fail to disclose or even remotely suggest all features of the presently claimed invention. Foremost, Applicants respectfully submit that the process disclosed by Skinner would not have been incorporated by one of ordinary skill to form the structures disclosed by Savoia. More particularly, Savoia discloses twin-lip seals. There is no teaching or suggestion of how to even incorporate the co-shaping technique of Skinner to form twin-lip seals as disclosed by Savoia. In this regard, turning to the drawings of the present application, the twin-lip seals according to different embodiments of the present invention are formed by co-forming a first seal, co-forming a second seal and bonding the two seals together to form a twin-lip seal. Absent Applicants' own teaching, there is no teaching or suggestion of how to even carry out the technique disclosed by Skinner to form any of the structures disclosed by Savoia.

Applicants submit that one of ordinary skill in the art would have not relied upon the teachings of Skinner and/or Adell for co-shaping, and applied such teaching to the structures disclosed by Savoia, because absent Applicants' own disclosure, one of ordinary skill in the art would consider the structures disclosed by Savoia to be exclusive to process techniques in which the individual layers are pre-shaped. Stated alternatively, absent Applicants' own disclosure, one of ordinary skill in the art would not have found it obvious to incorporate the co-shaping

technique of Skinner or Adell to form the structures disclosed by Savoia, as those structures would have been understood to be incompatible with a co-shaping technique. The additional cited reference Adell fails to bridge the gap between Savoia and Skinner. Accordingly, the rejection over Savoia in view of Skinner and Adell should be withdrawn for this reason alone.

Still further, the art of record fails to teach the combination of (i) shape forming such that the substrate and polymer are bent together, forming a contoured portion along which both the substrate and polymer extend, and (ii) a sealing element that includes a portion that projects beyond and away from its underlying casing member (formed from the metal substrate). Here, while Savoia discloses embodiments having portions of the sealing element that extend beyond its respective casing, the Savoia structures do not include a contoured portion along which both the substrate and polymer extend. While Skinner discloses a structure in which the polymer layer is co-extensive with its underlying substrate, there is no suggestion to modify the Savoia structure to have such a feature.

For at least the foregoing reasons, Applicants respectfully submit that the presently claimed invention would not have been obvious over Savoia in view of Skinner and Adell. Accordingly, reconsideration and withdrawal of the section 103 rejection are respectfully requested.

4. Claim 23 was rejected under section 103 over Savoia, Skinner and Adell as described above, in further view of Kondo.

Applicants respectfully submit that Kondo fails to overcome the deficiencies of the combination of Savoia, Skinner, and Adell described above. Accordingly, withdrawal of this rejection is respectfully requested as well.

5. Claims 27, 28 and 30 were rejected under §103 over Torii et al. in view of Skinner and Adell. This rejection is respectfully traversed for the following reasons.

It appears that the teachings of Torii et al. have been relied upon in line with the PTO's reliance upon Savoia described above, but with further disclosure relating to joining together two shaped polymer laminated metallic constructions. In this regard, Applicants submit that the disclosure of Torii et al. in view of the secondary references fails to meet all features of the presently claimed invention, for the same reasons articulated above. In addition, the references fail to disclose or even remotely suggest a process including co-shape forming combined with a contoured portion along which both the metallic substrate and the polymer material layer extend.

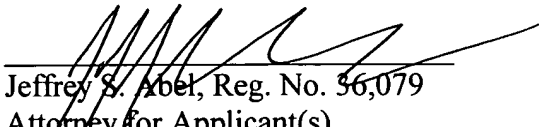
For at least the foregoing reasons, Applicants submit that the presently claimed invention would not have been obvious over Torii et al. in view of Skinner and Adell. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicants undersigned representative at the number listed below.

Respectfully submitted

10/13/03
Date


Jeffrey S. Abel, Reg. No. 56,079
Attorney for Applicant(s)
TOLER, LARSON & ABEL, L.L.P.
P.O. Box 29567
Austin, Texas 78755-9567
(512) 327-5515 (phone)
(512) 327-5452 (fax)